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FILTRATION

CURRENT DESIGN AND OPERATION

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VELCON FILTERS INC.

- COALESCERS
- SEPARATORS
- MONITORS
- MICROFILTERS
- CLAY ELEMENTS

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FILTER WATER SEPARATORS

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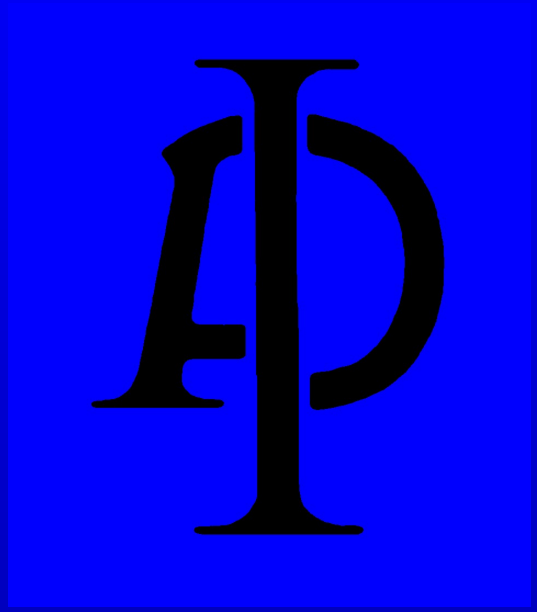

Specification and Qualification procedures.
Aviation Jet Fuel Filter/Separators.

API BULLETIN 1581

3rd edition 1989

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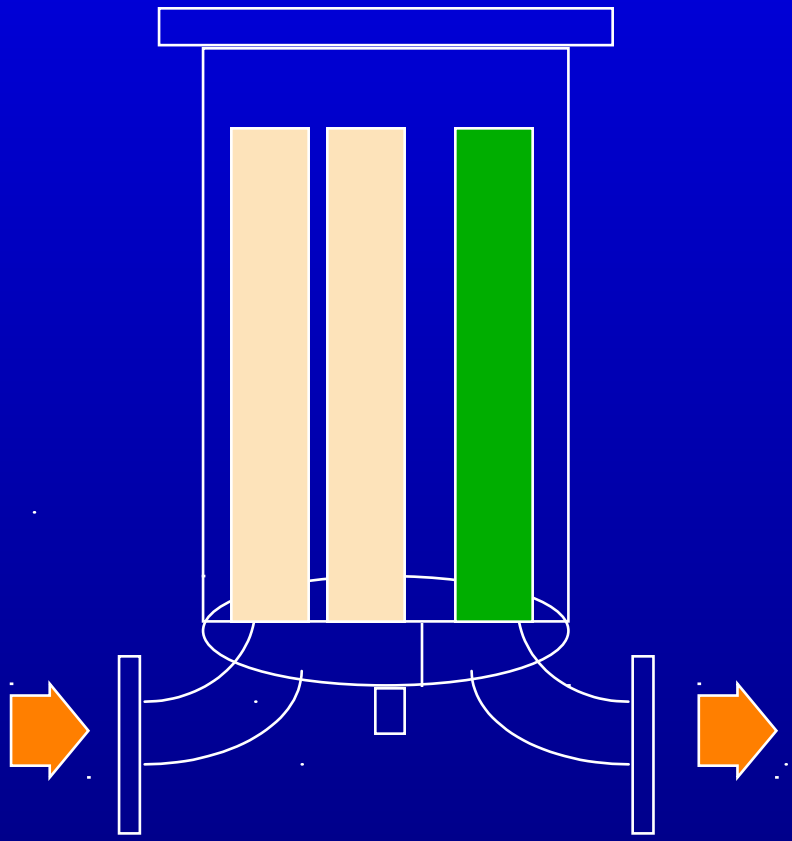
FILTER WATER SEPARATOR



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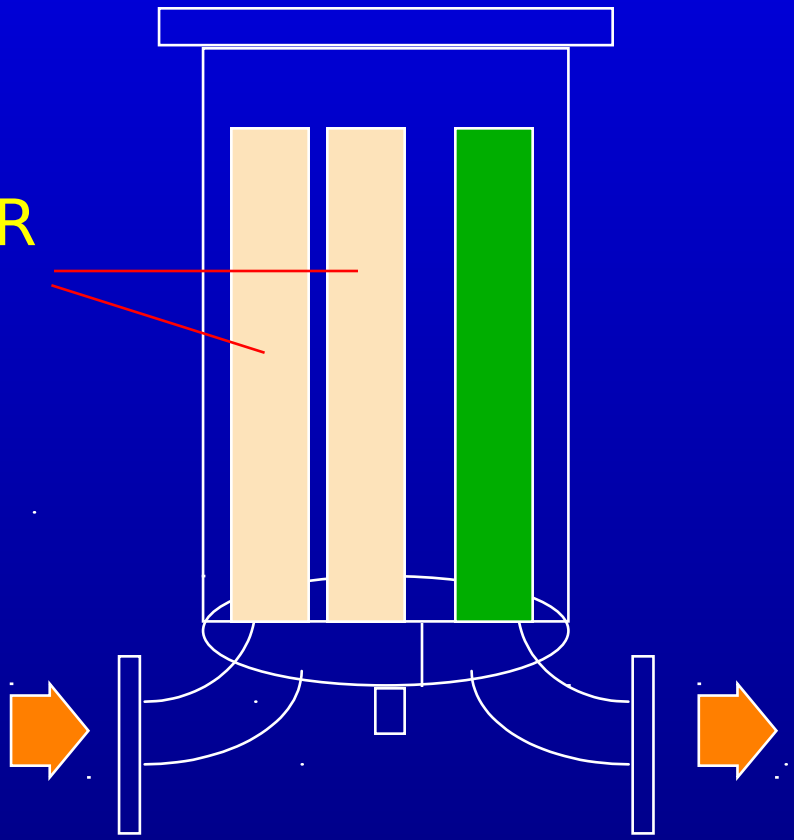
FILTER WATER SEPARATOR

COALESCER
ELEMENTS



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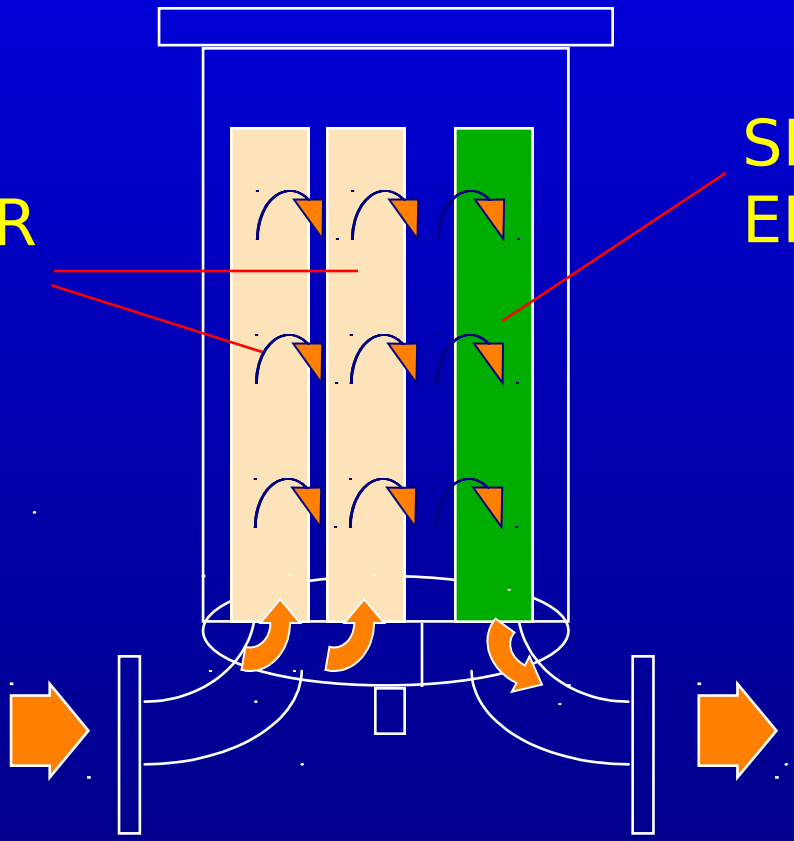
FILTER WATER SEPARATOR



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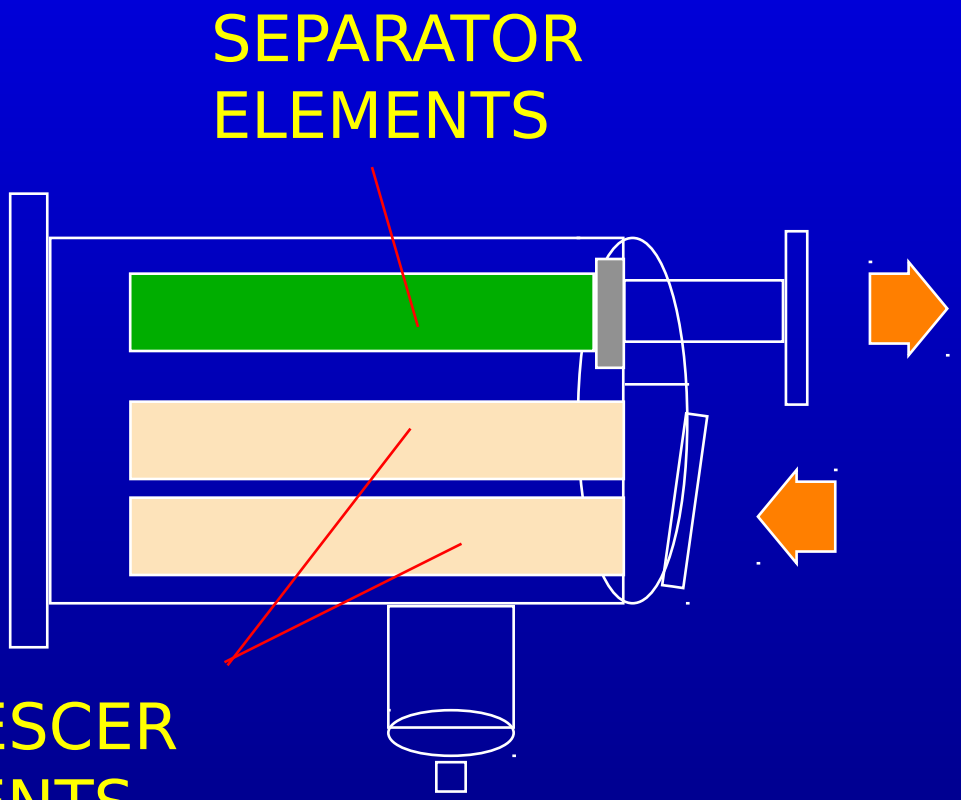
FILTER WATER SEPARATOR



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COALESCER ELEMENT

SEPARATOR ELEMENT

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COALESCER ELEMENTS IN MANY SIZES

THREADED BASE ELEMENTS

OPEN ENDED ELEMENTS

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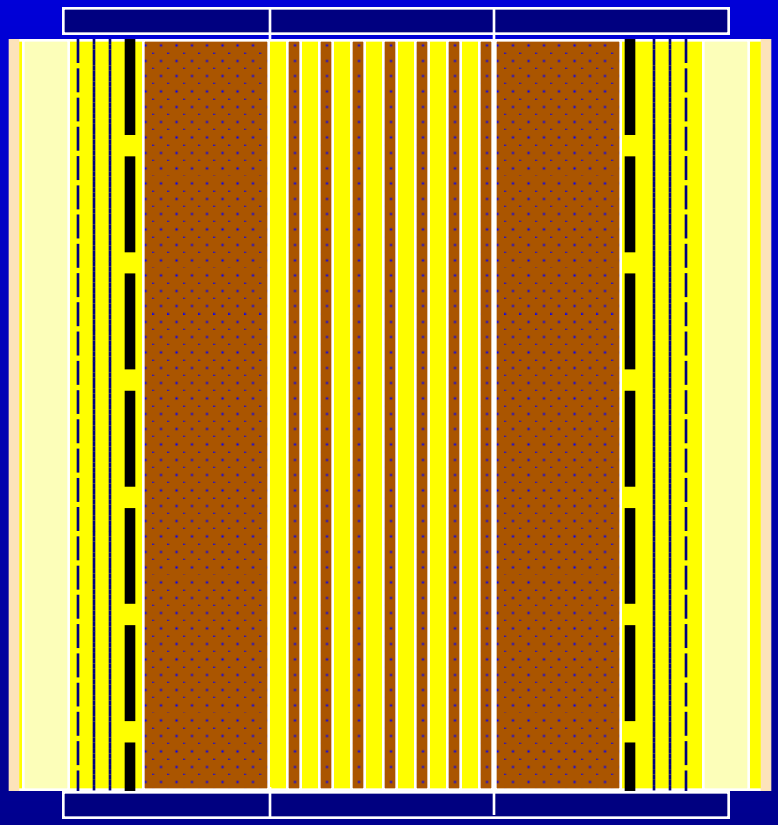
COALESCER ELEMENT



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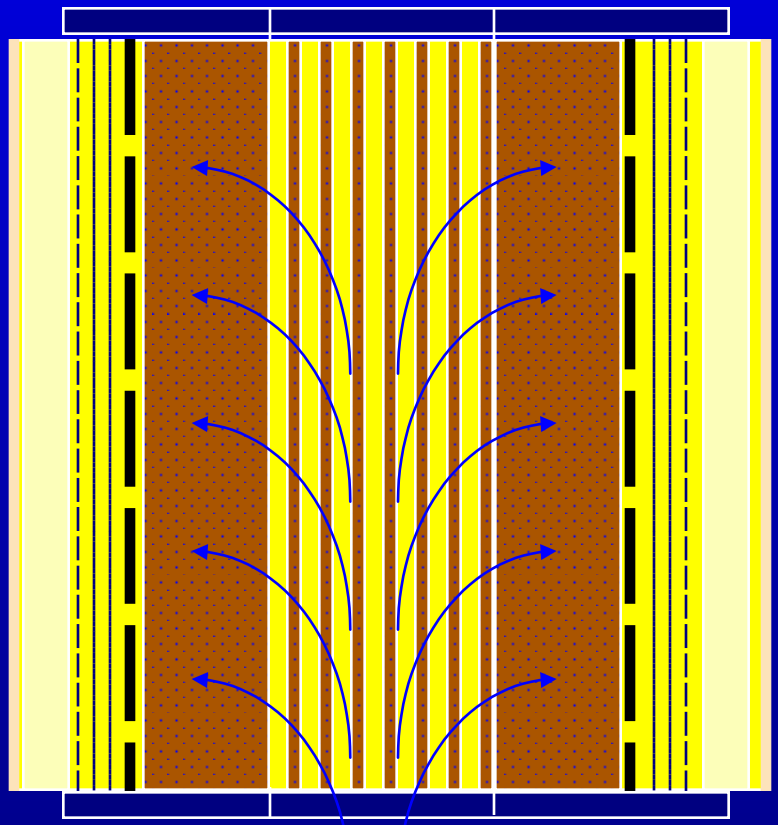
COALESCER ELEMENT



FLOW DIRECTION
IN TO OUT

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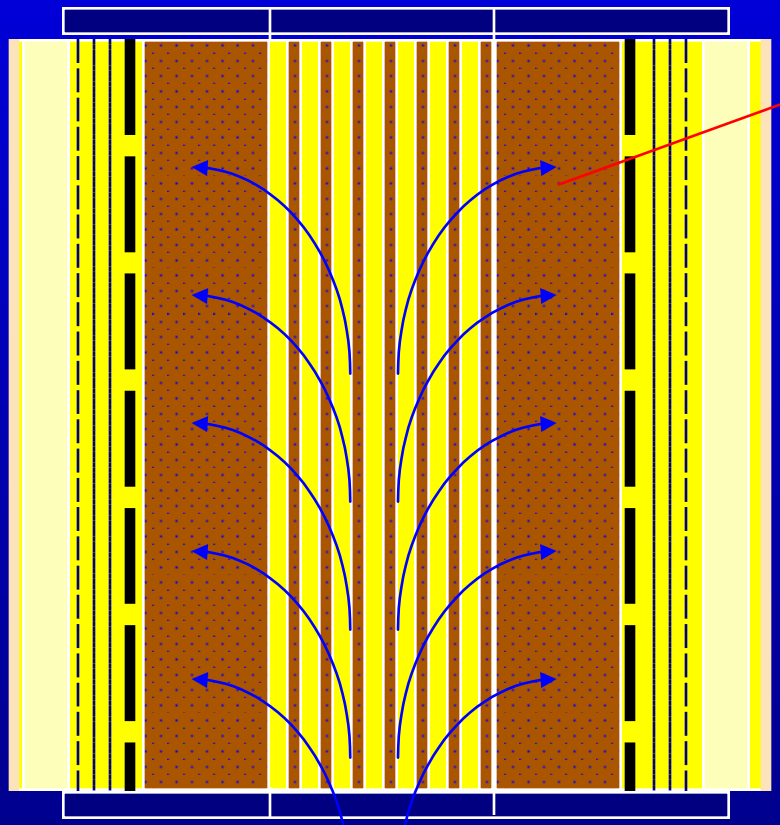
COALESCER ELEMENT



FILTRATION LAYERS

FLOW DIRECTION
IN TO OUT

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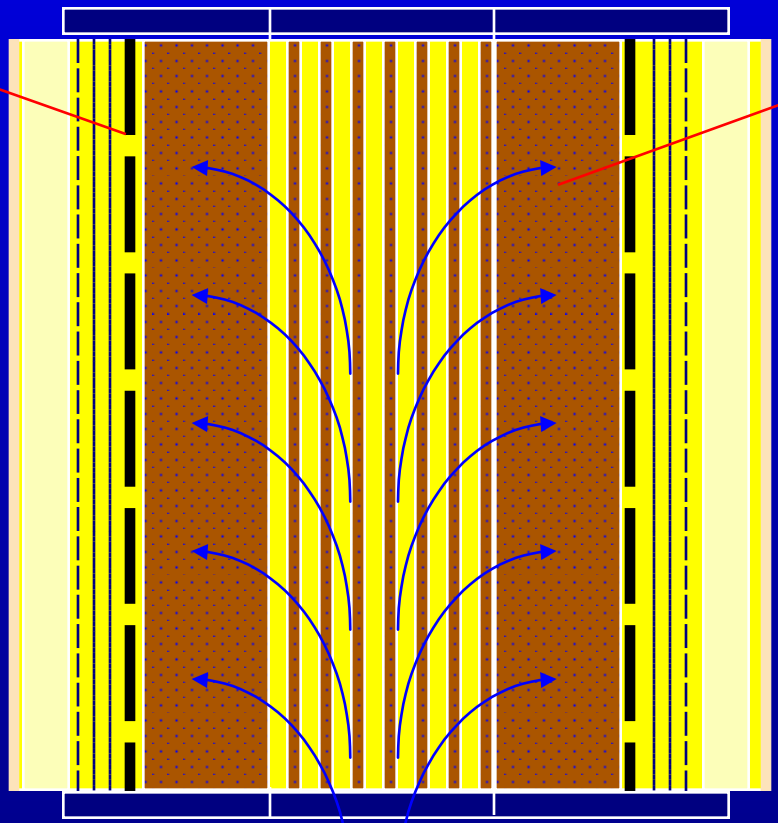
COALESCER ELEMENT

CENTRE TUBE



FILTRATION LAYERS

FLOW DIRECTION
IN TO OUT

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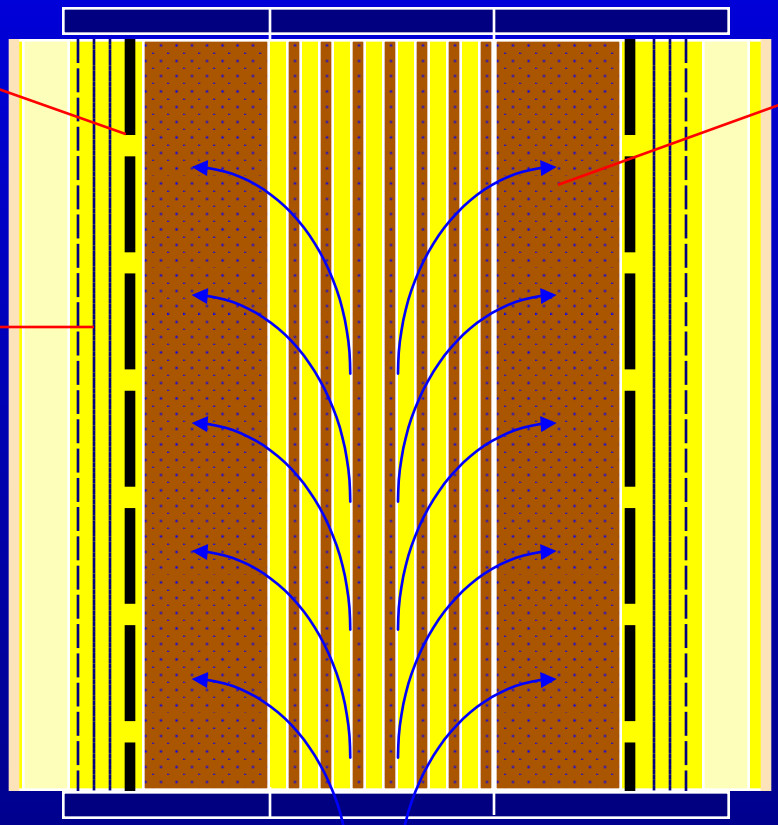
COALESCER ELEMENT

CENTRE TUBE

COALESCING LAYERS



FILTRATION LAYERS

FLOW DIRECTION
IN TO OUT

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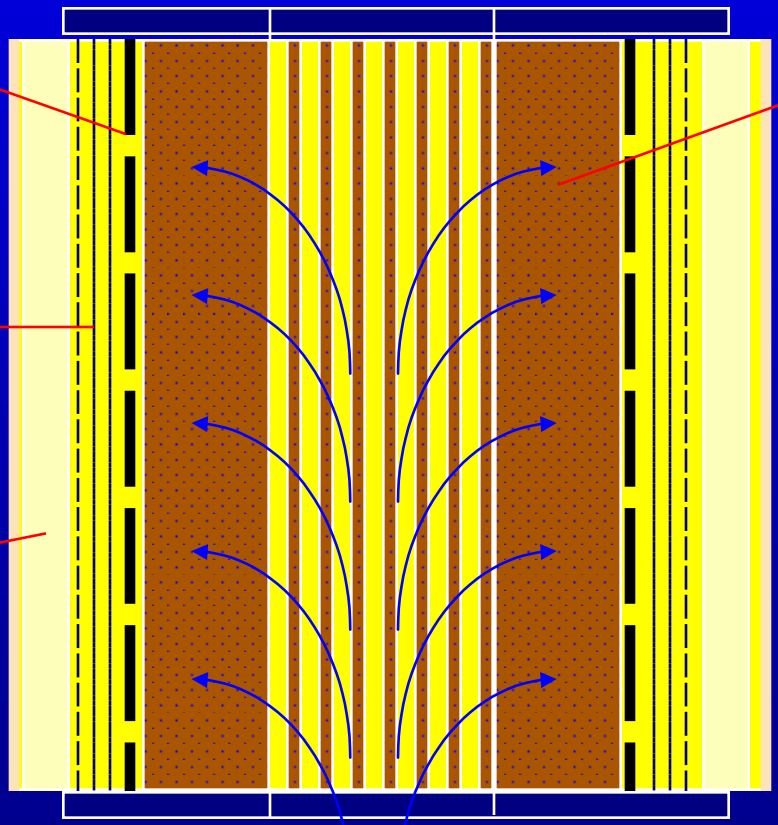
COALESCER ELEMENT



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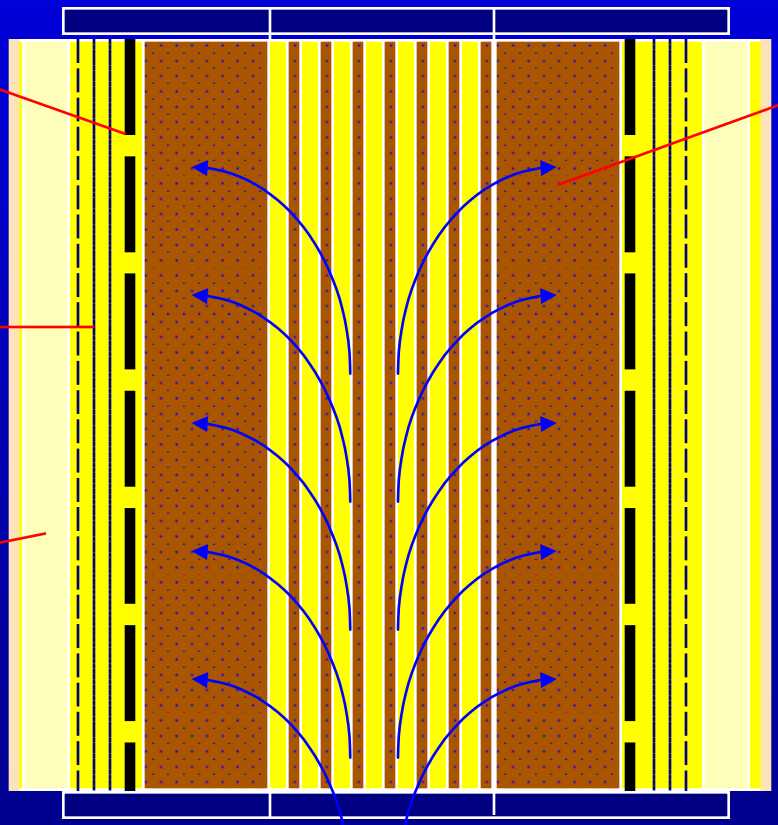

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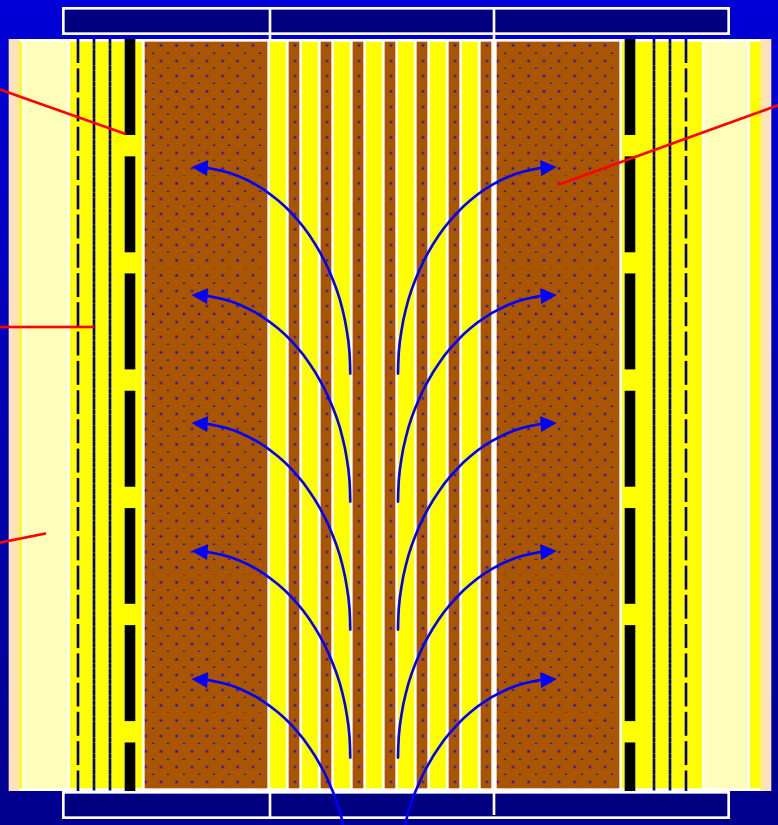

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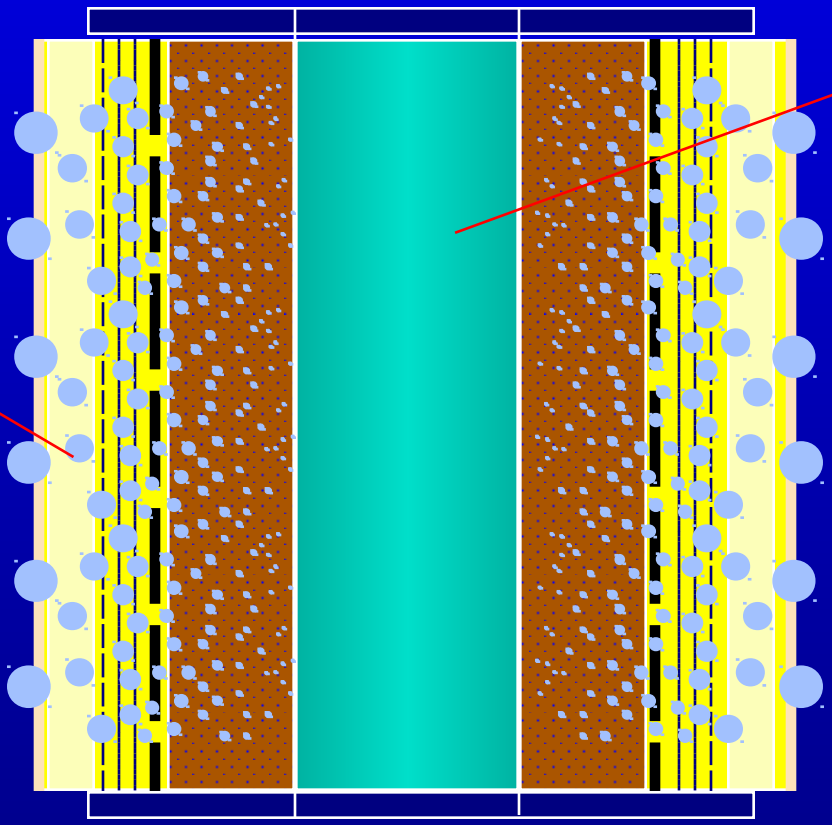
COALESCER ELEMENT



FUEL/WATER
EMULSION

WATER
DROPLETS

FLOW DIRECTION
IN TO OUT

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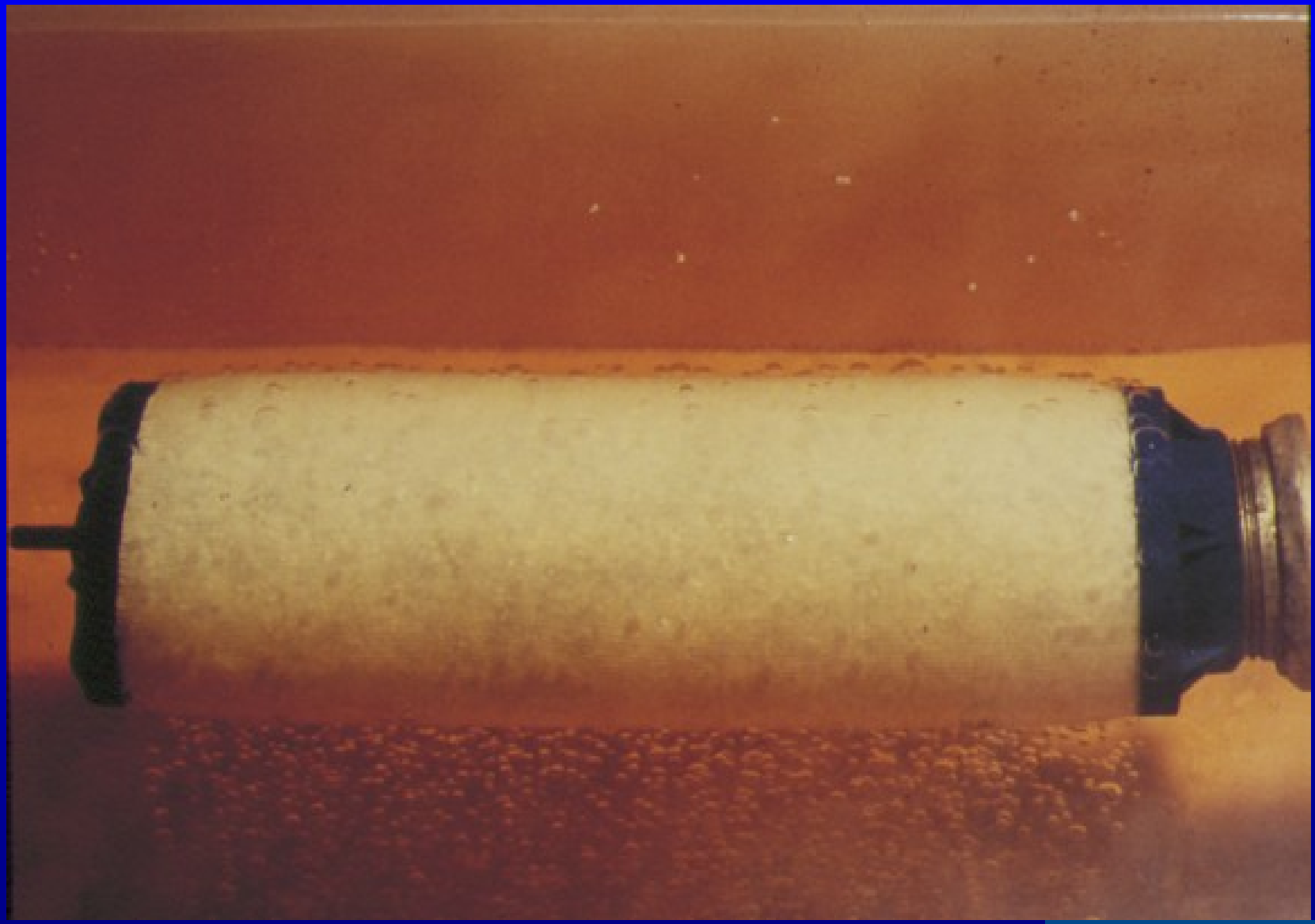
COALESCING



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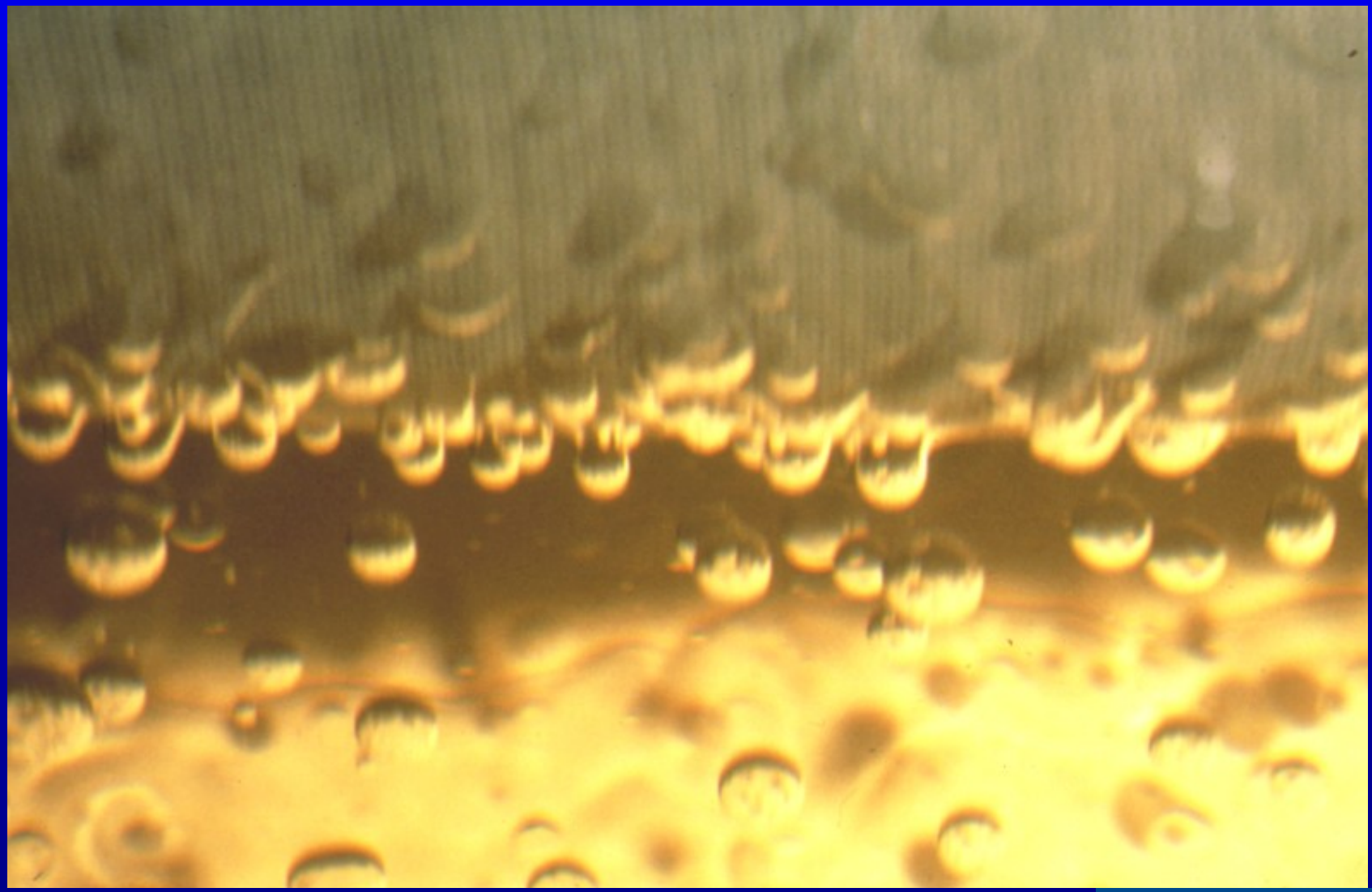
COALESCING



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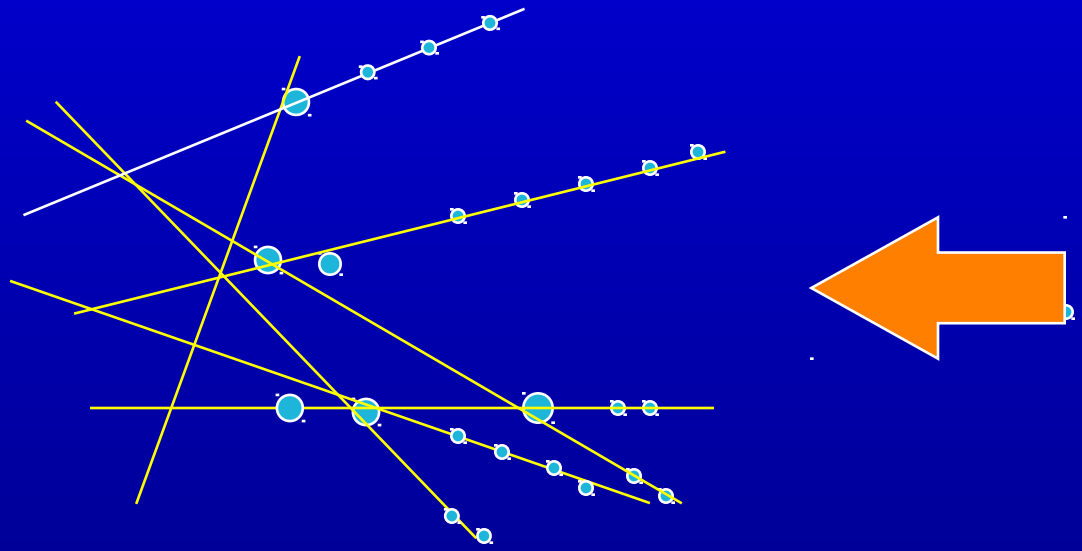
COALESCING



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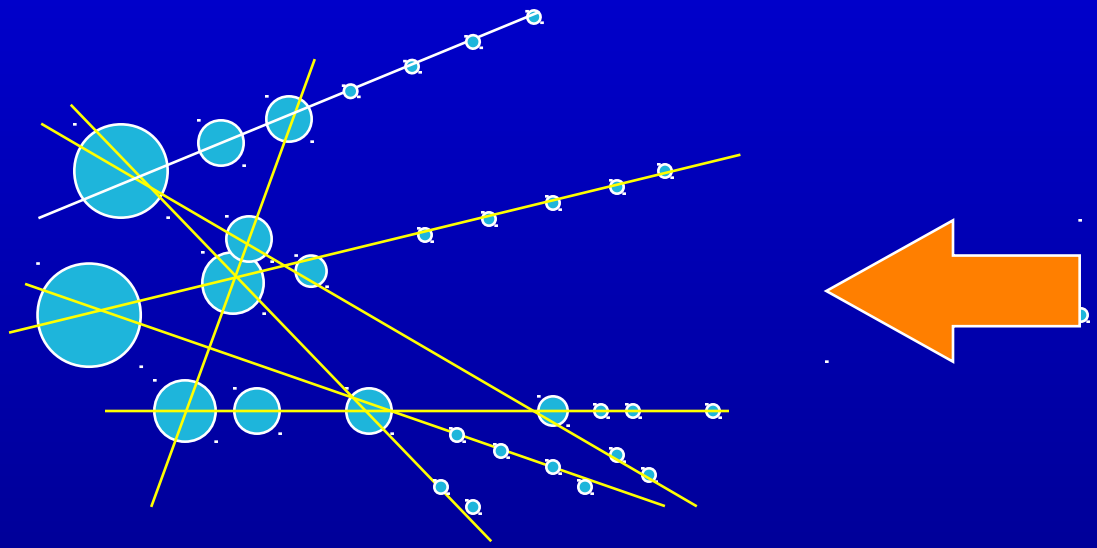
COALESCING



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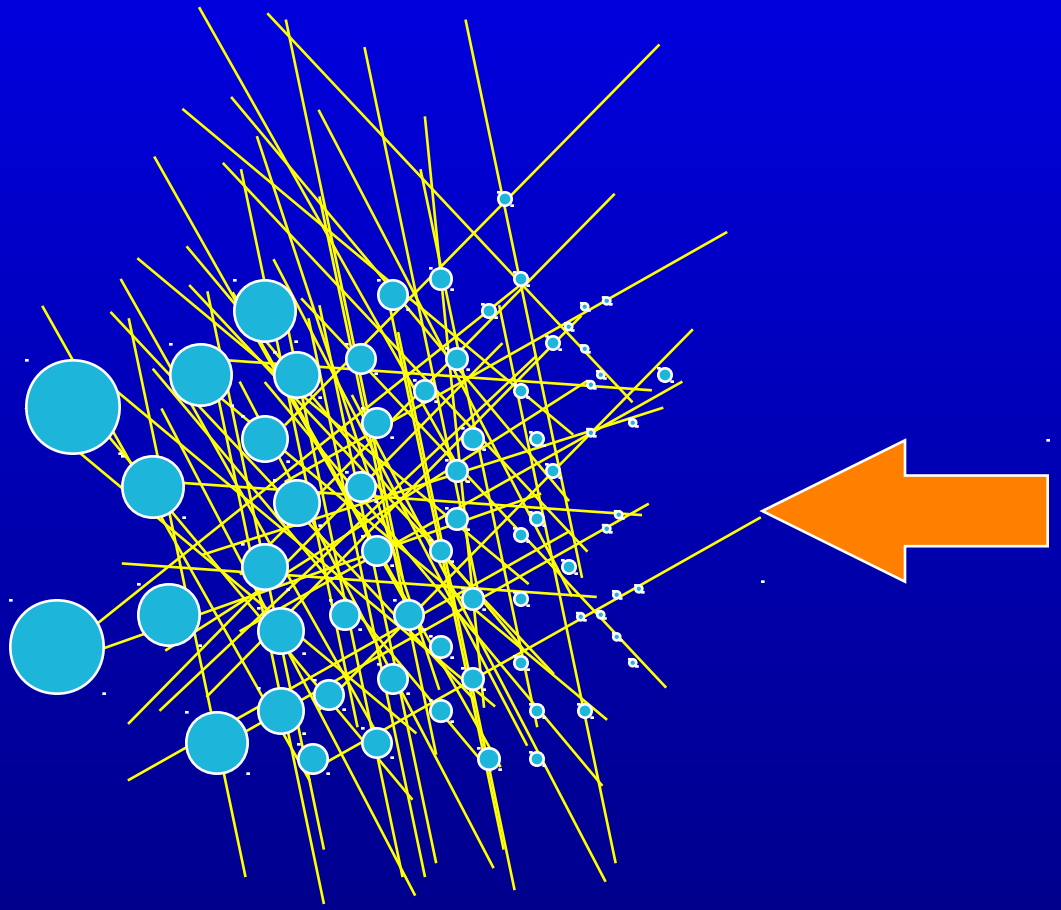

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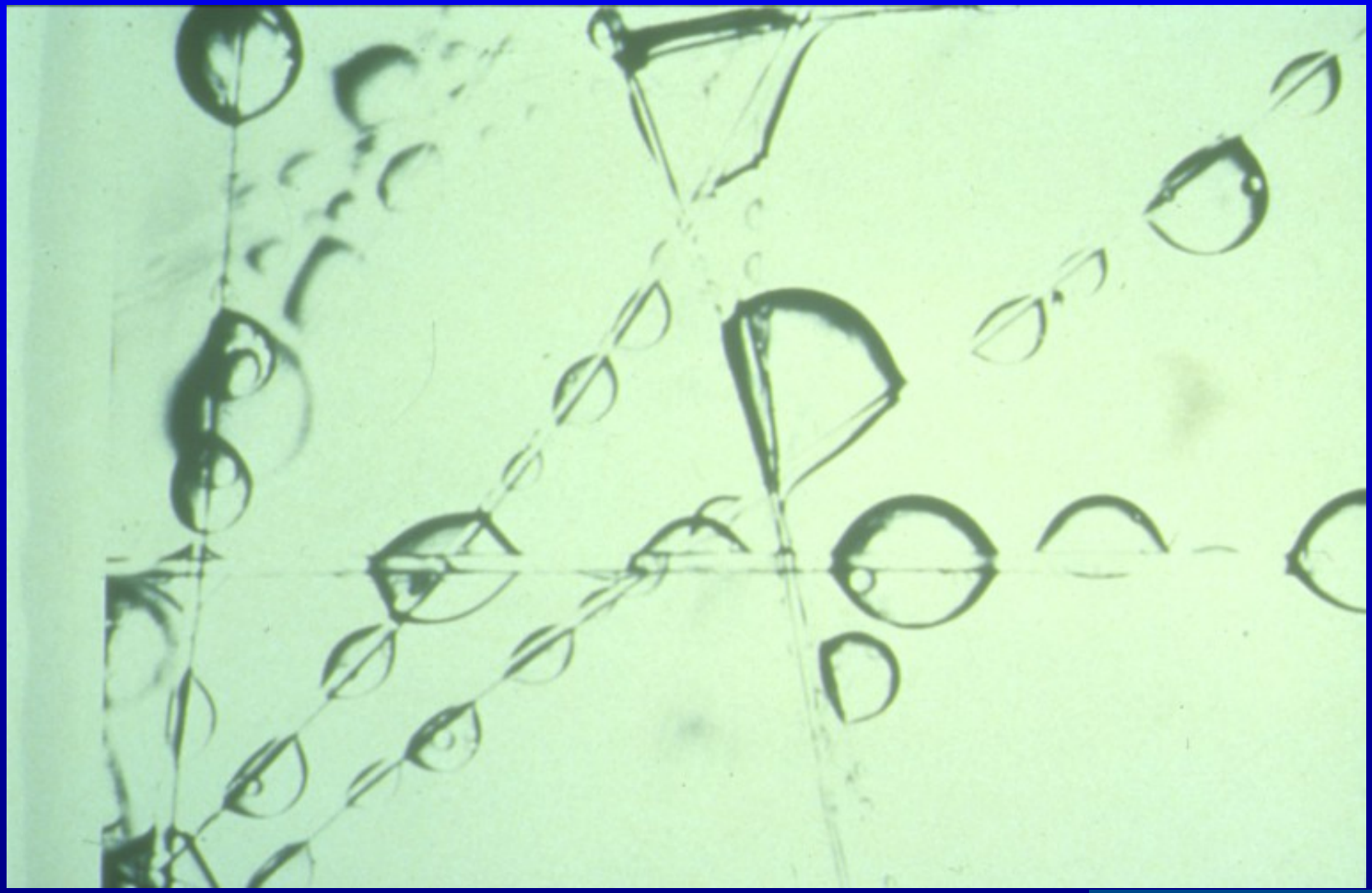
COALESCING



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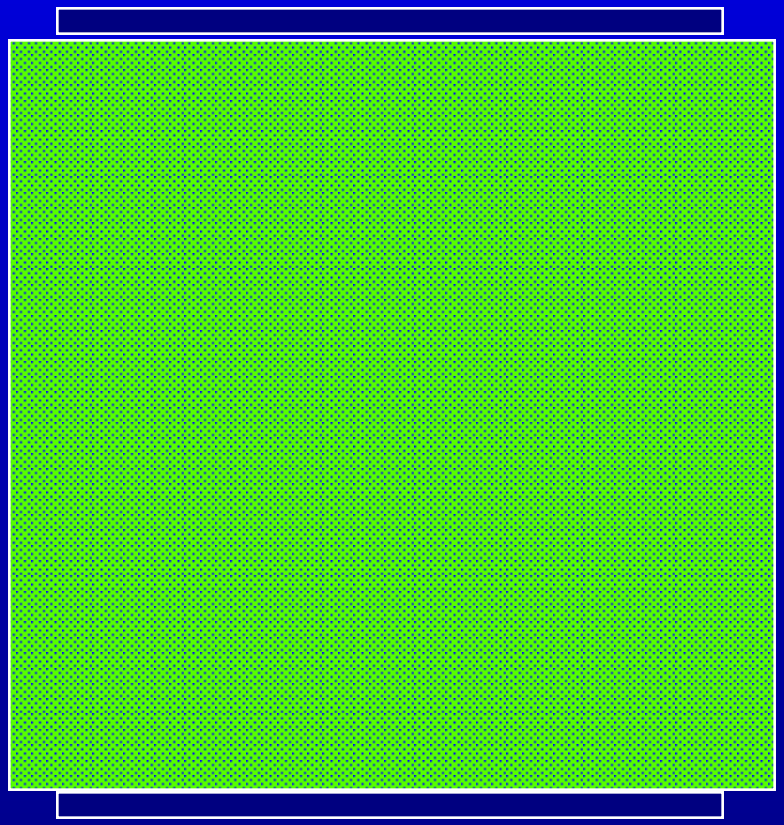
SEPARATOR ELEMENT



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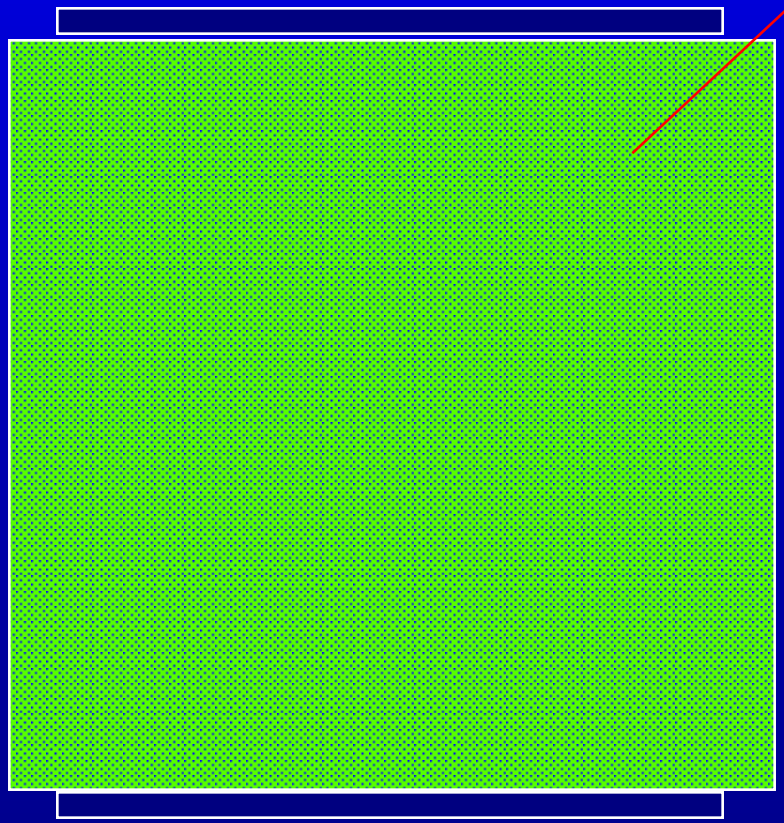

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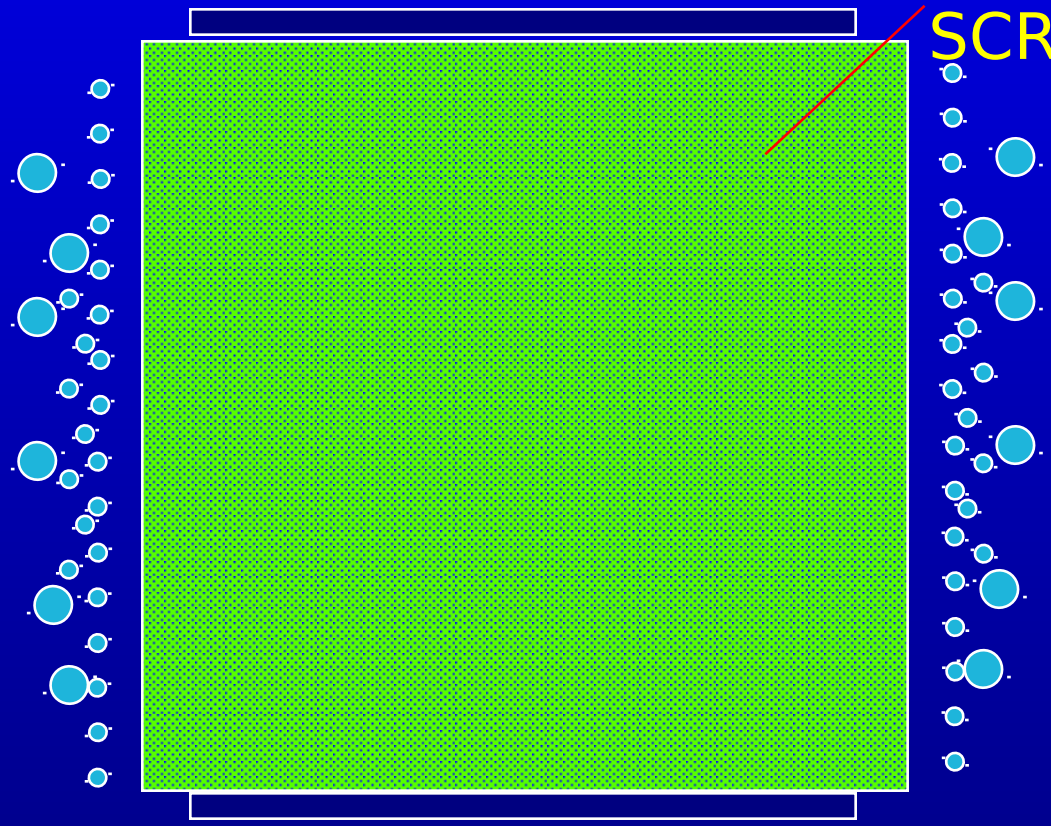

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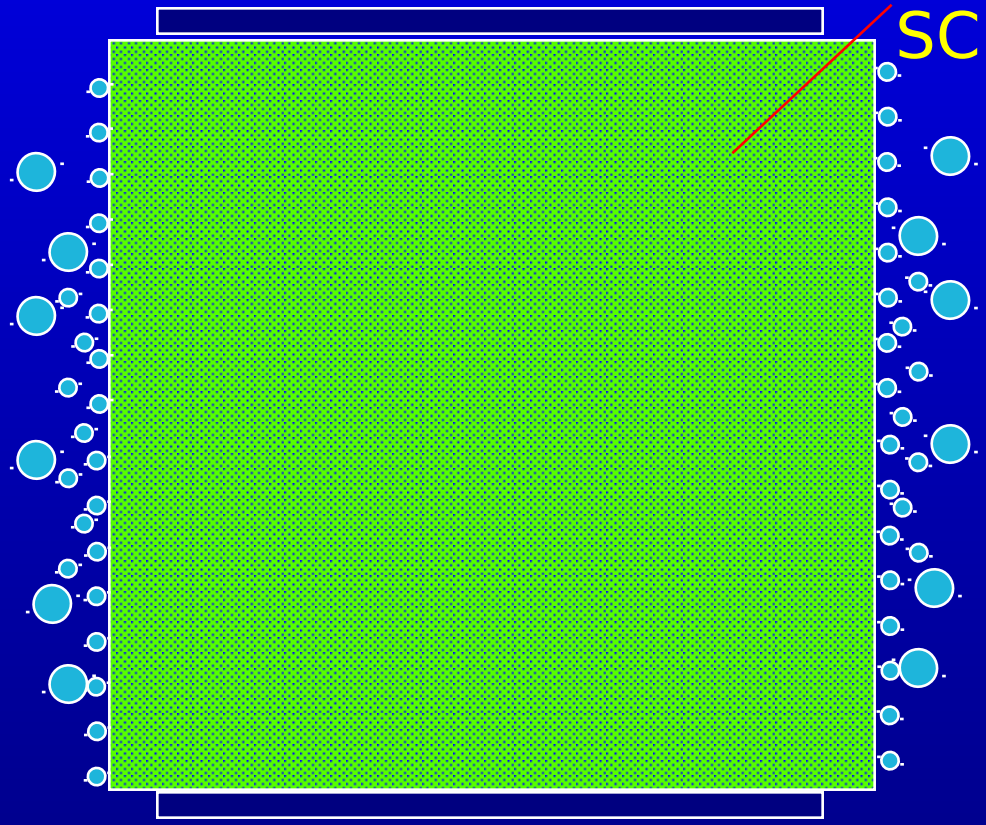

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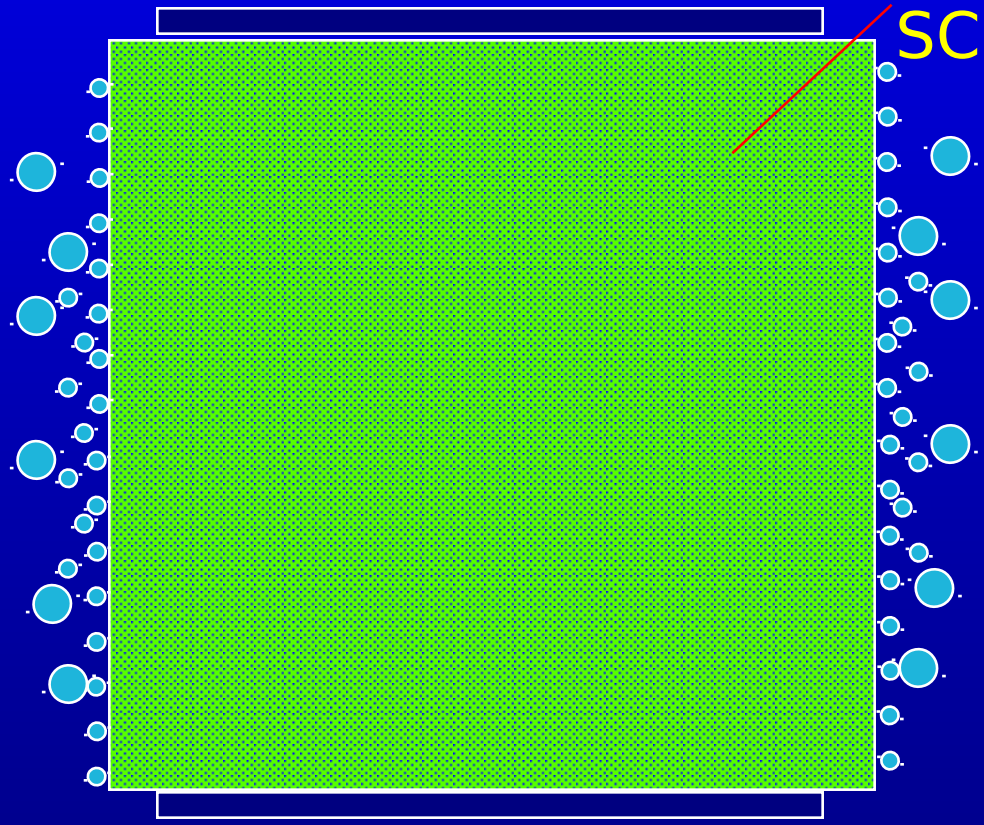
SEPARATOR ELEMENT

WATER DROPLETS REPELLED BY TEFLON COATED MESH

TEFLON COATED SCREEN



WARNER LEWIS

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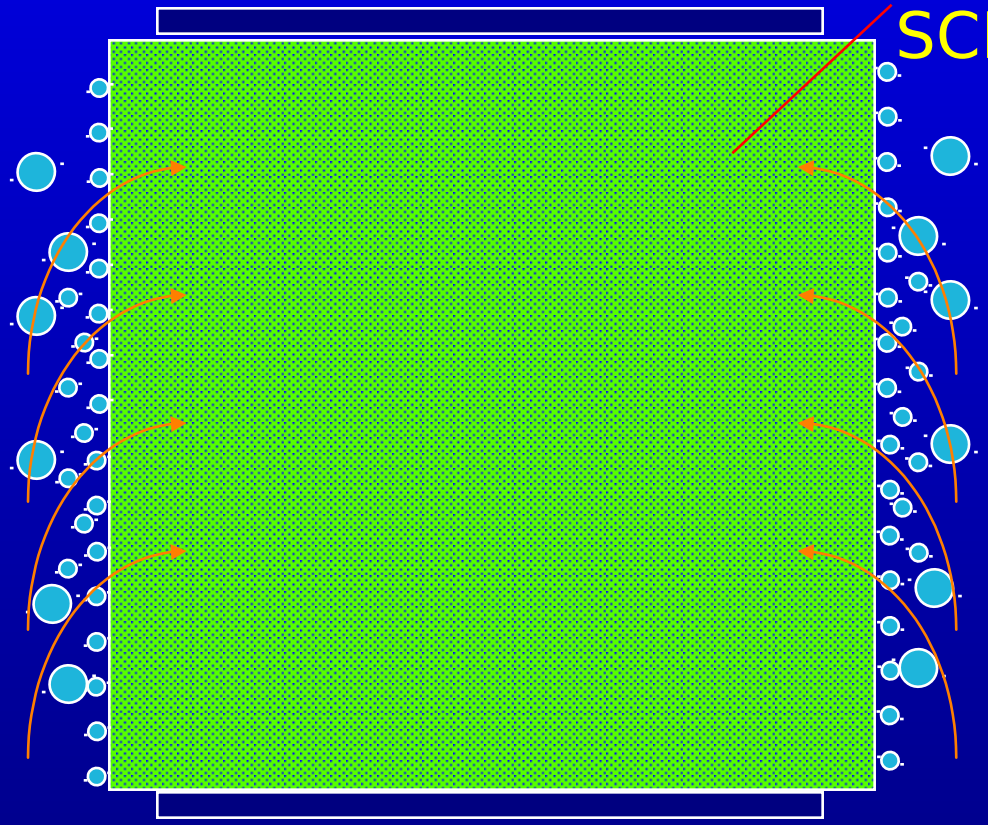

FLOW DIRECTION OUT TO IN

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FILTER WATER MONITORS

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IP THE INSTITUTE OF PETROLEUM

Specification and Qualification Procedures - Aviation Fuel Filter Monitors with Absorbent Type Elements - June 1987

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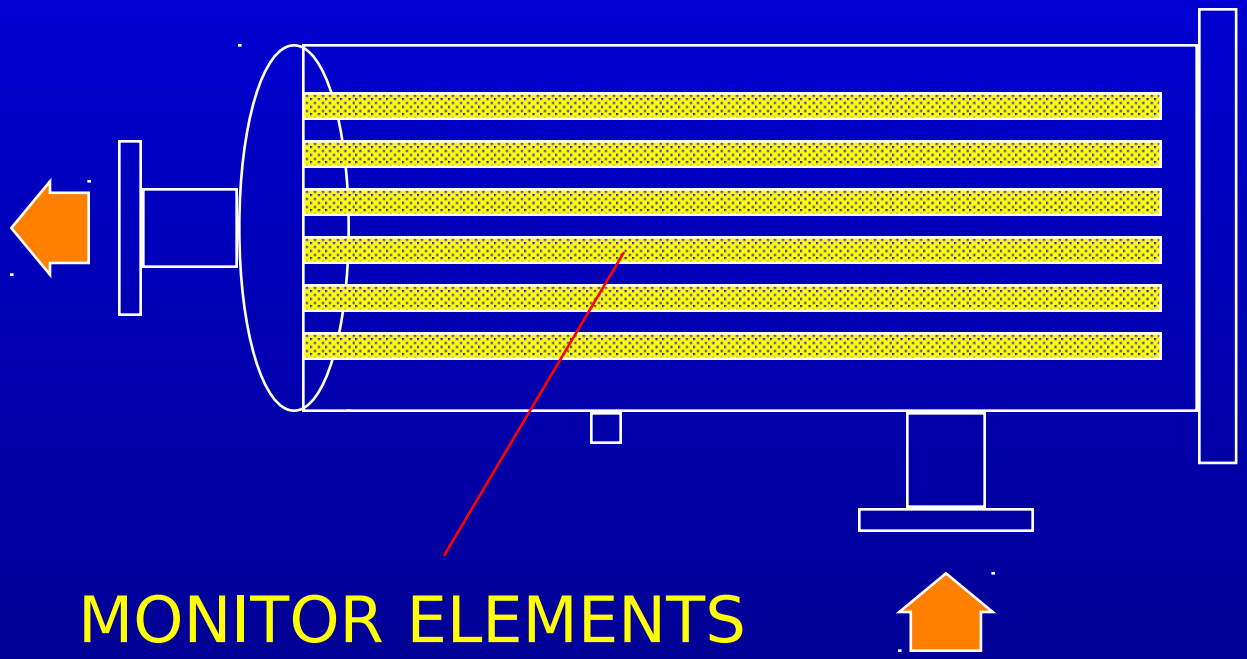
FILTER WATER MONITOR



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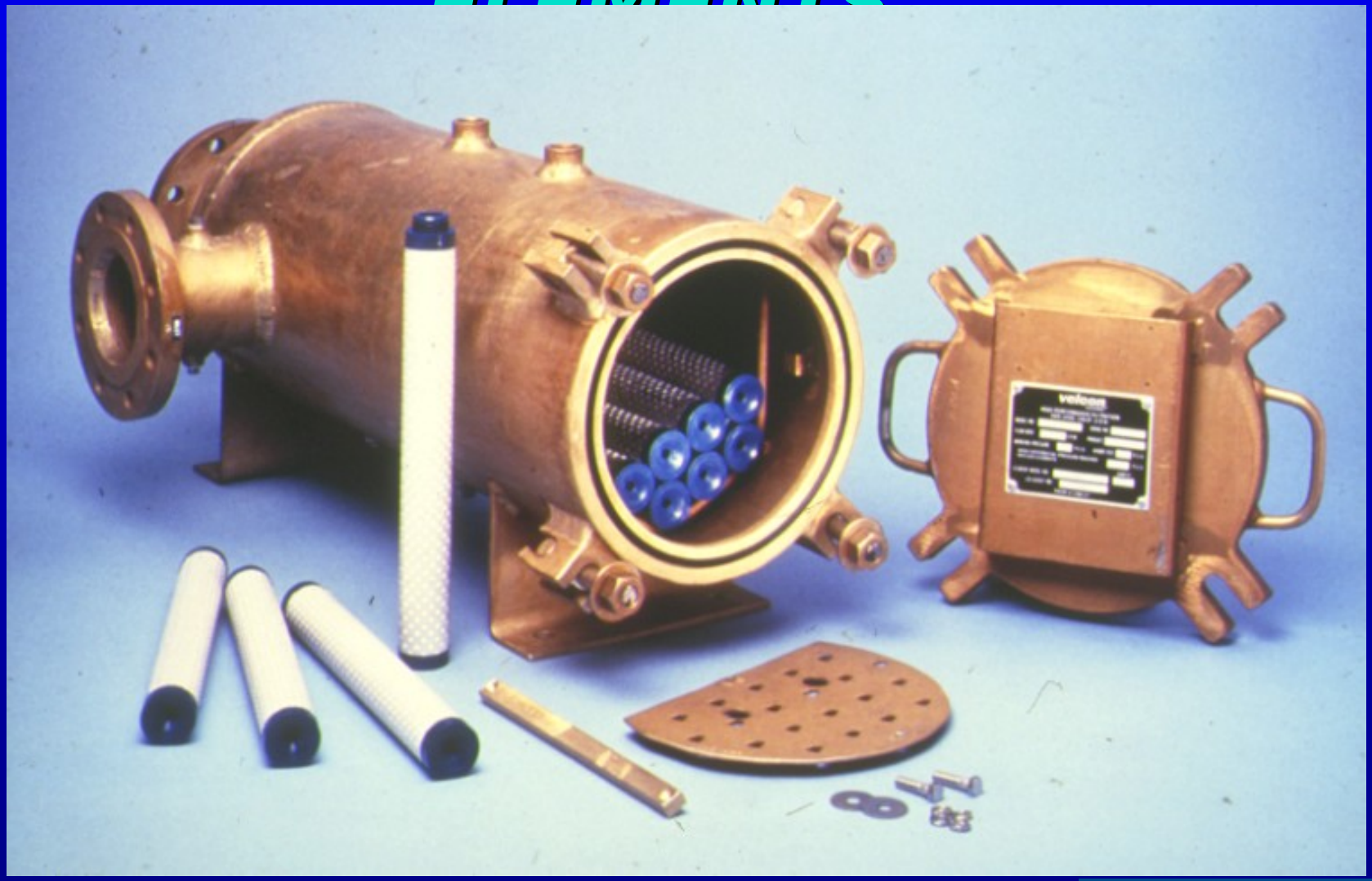
FILTER WATER MONITOR WITH 2” VELCON CDF ELEMENTS



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VELCON CDF MONITOR ELEMENT

WATER ABSORBING LAYERS

FILTRATION LAYERS

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FILTER WATER MONITOR

ADVANTAGES OF MONITOR VESSELS OVER FILTER WATER SEPARATORS :

- SMALLER, LIGHTER
- LESS EXPENSIVE
- WILL NOT ALLOW A SLUG OF WATER THROUGH
- DOES NOT BECOME DISARMED BY SURFACTANTS
- EASIER ELEMENT CHANGEOUT

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FILTER WATER MONITOR

DISADVANTAGES OF MONITOR VESSELS OVER FILTER WATER SEPARATORS :

- IN DIRTY OR WET FUEL, MONITOR ELEMENTS WILL BE UNECONOMICAL SINCE THEY WILL REQUIRE REPLACING TOO OFTEN.

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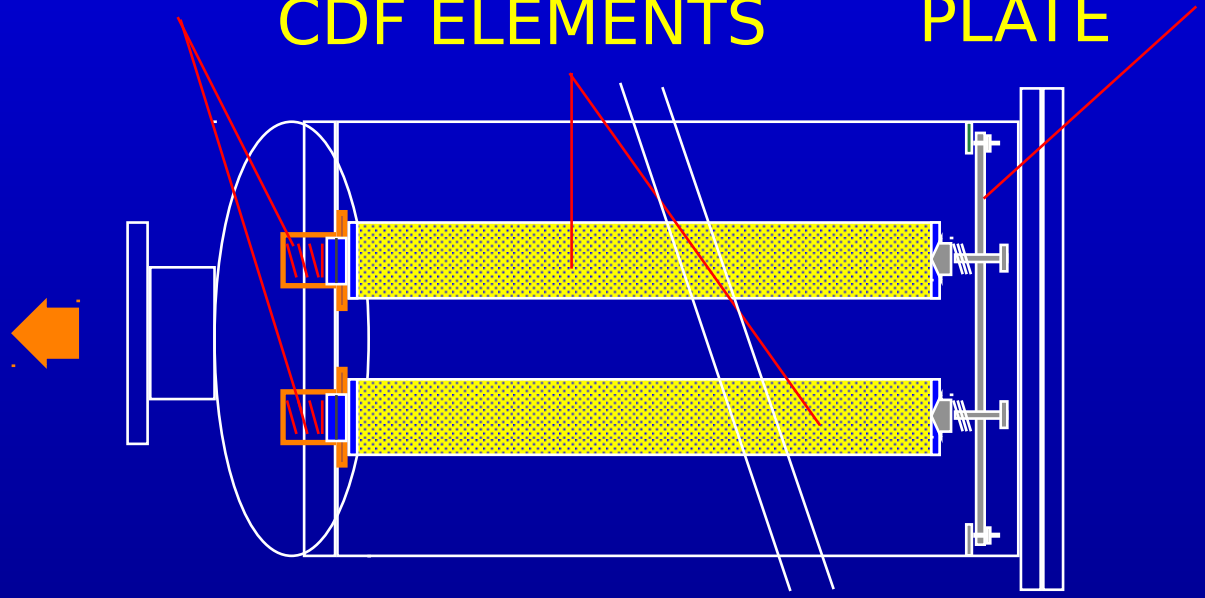
FILTER WATER MONITOR

CHECK VALVES

CDF ELEMENTS

ELEMENT RETAINING PLATE



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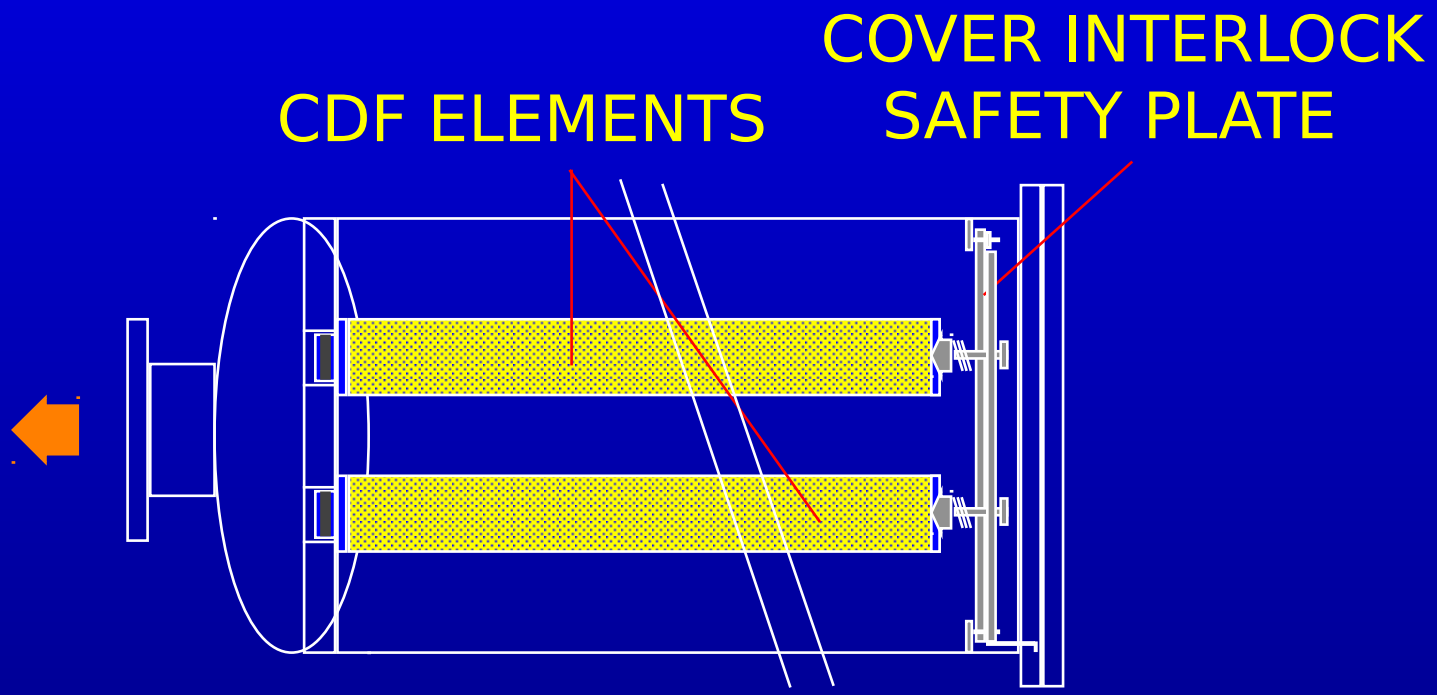
FILTER WATER MONITOR



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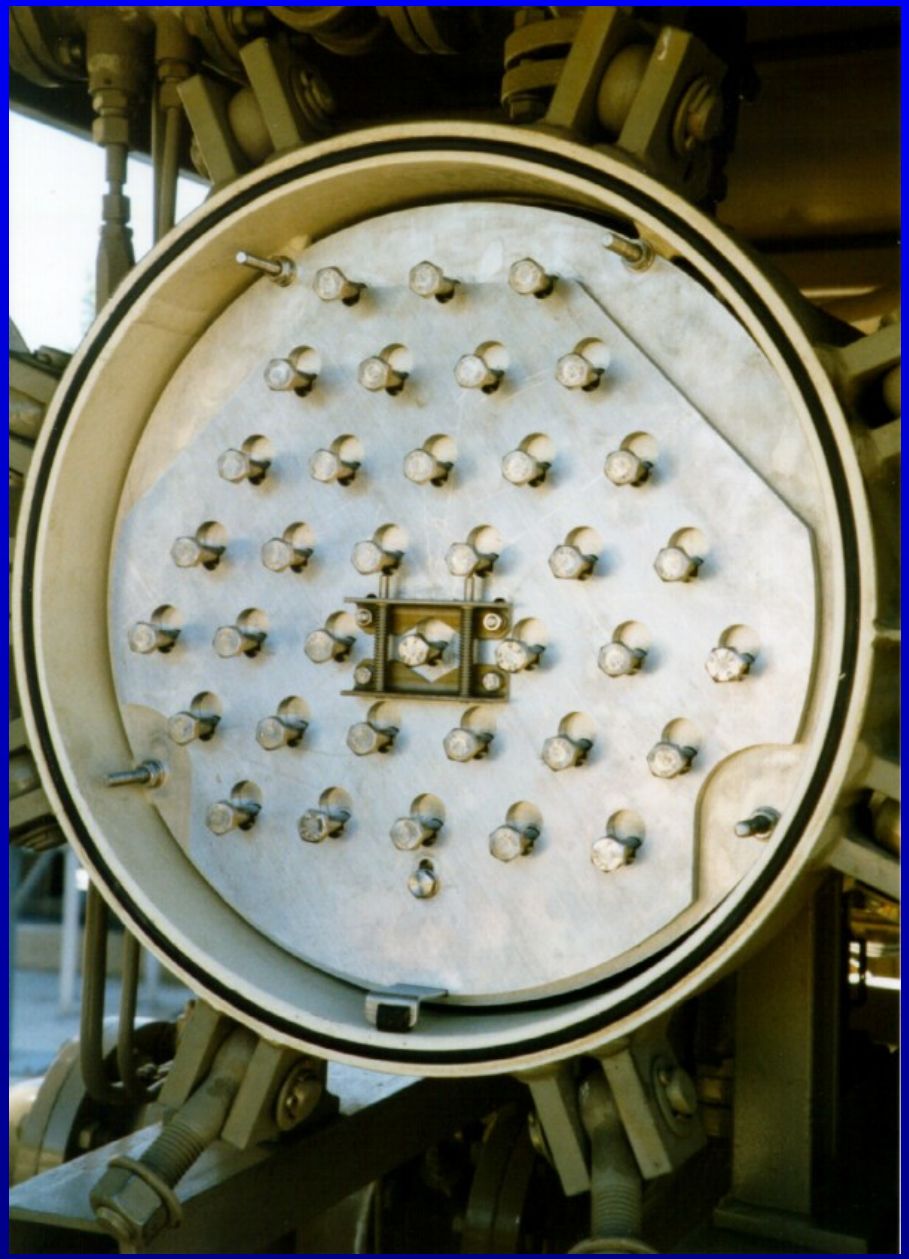

Monitor vessel cover interlock plate.

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VELCON CDF MONITOR ELEMENT

- CDF MONITOR ELEMENTS USED IN FINAL STAGE FILTRATION AND WATER REMOVAL.

- LITTLE WATER AND DIRT HOLDING CAPACITY.

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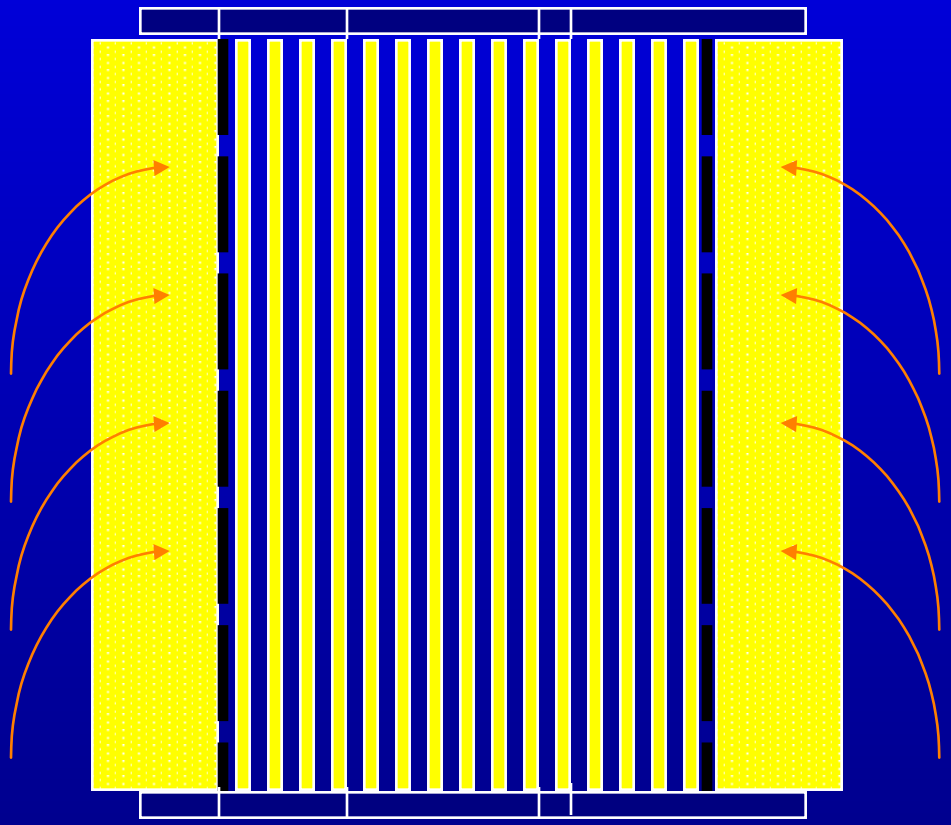
AQUACON ELEMENT TYPE ACO



FLOW DIRECTION OUT TO IN

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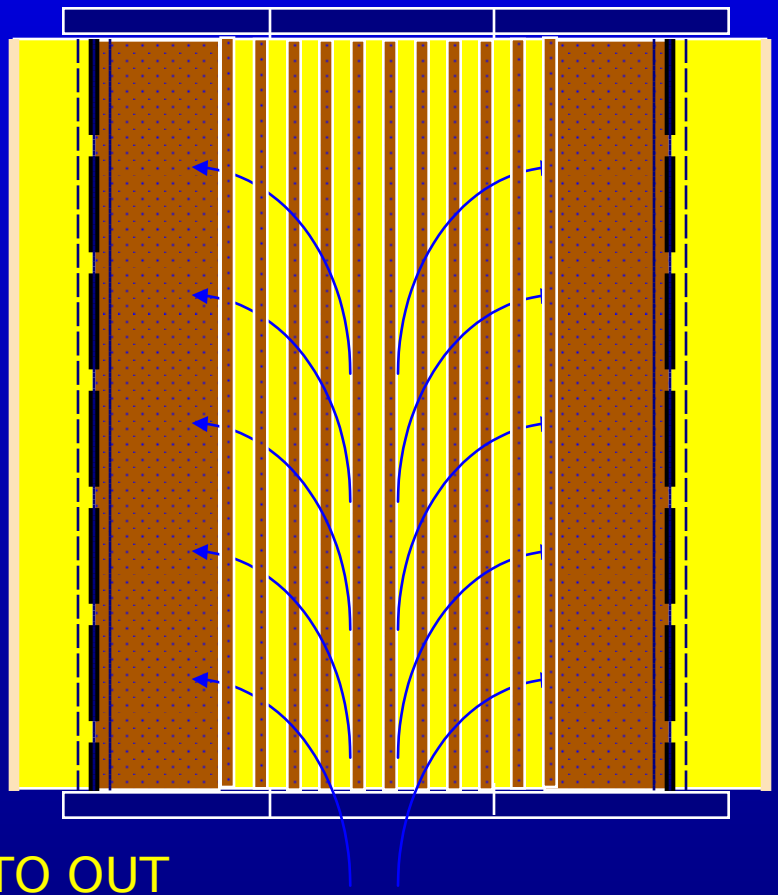
AQUACON ELEMENT TYPE ACI



FLOW DIRECTION IN TO OUT

WARNER LEWIS

VELCON AQUACON MONITOR ELEMENT

- AQUACON MONITOR ELEMENTS USED FOR FILTRATION AND WATER REMOVAL.

- LARGE WATER AND DIRT HOLDING CAPACITY.

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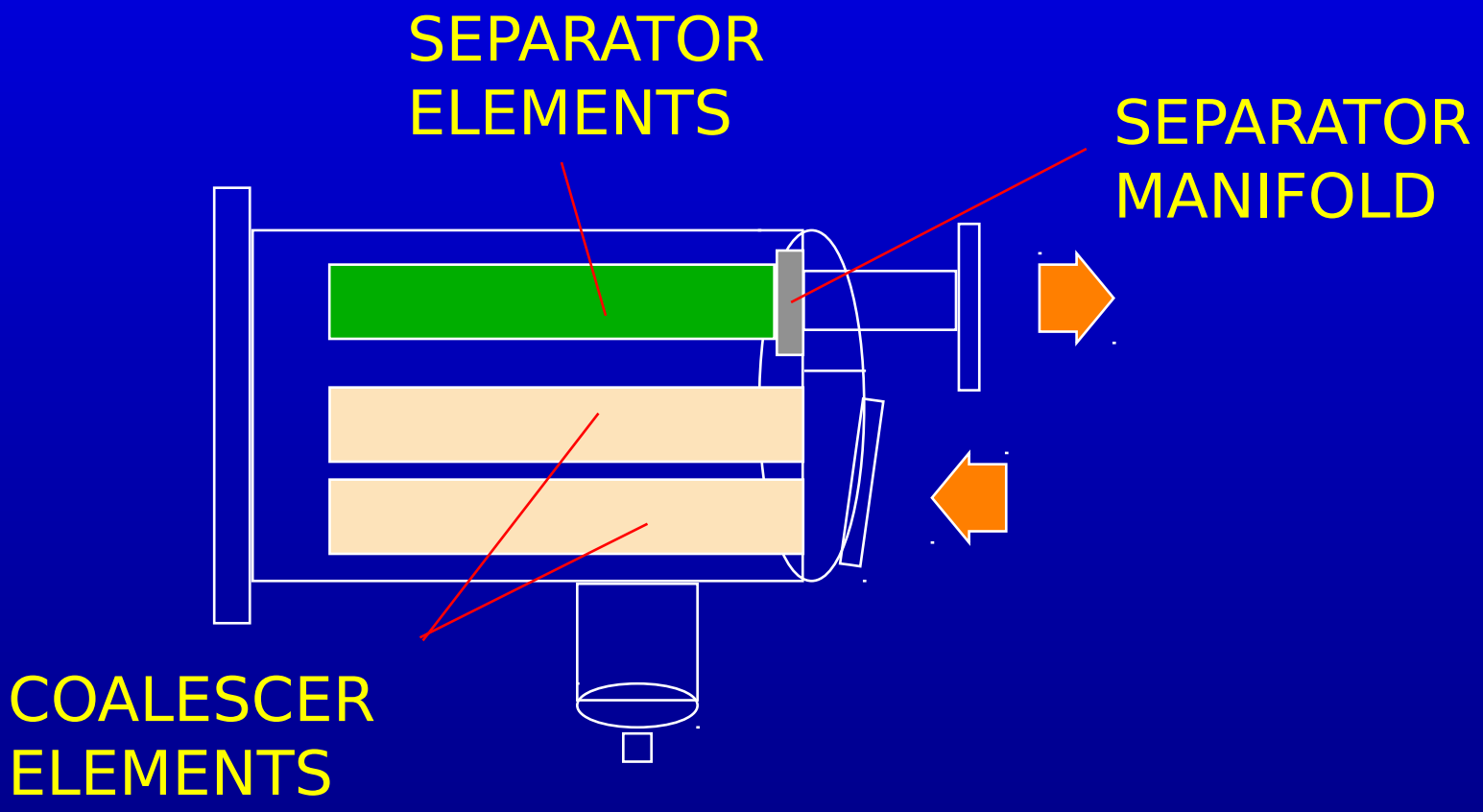
FILTER WATER SEPARATOR



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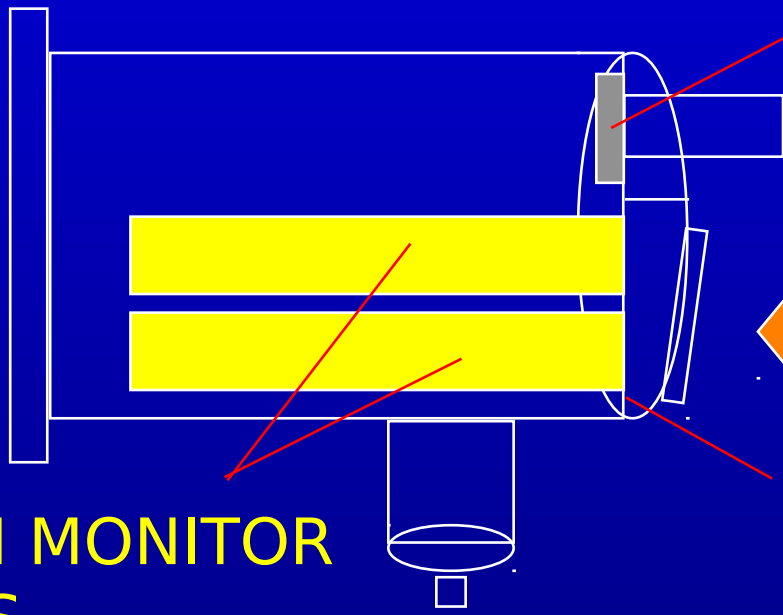
FILTER WATER SEPARATOR CONVERSION TO FILTER MONITOR



SEPARATOR MANIFOLD

REQUIRES STRENGTHENED DECK PLATE

AQUACON MONITOR ELEMENTS

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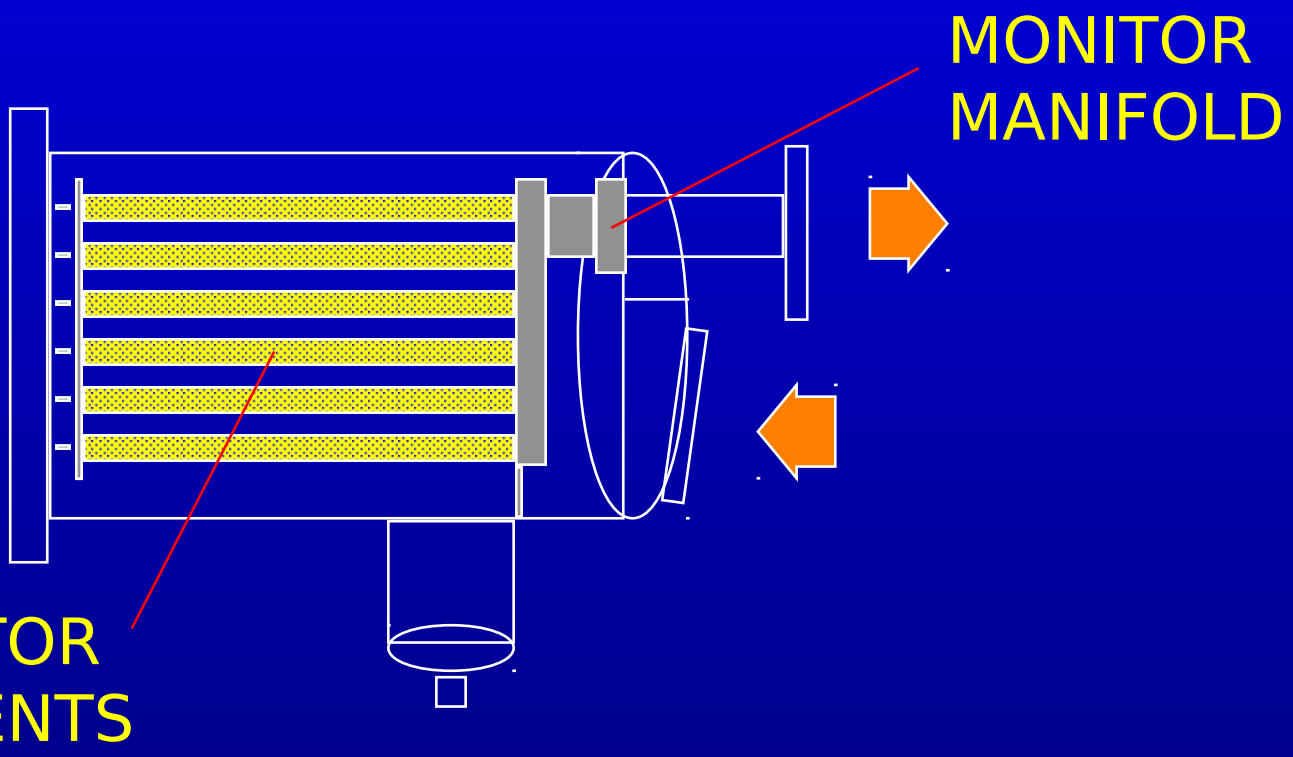
FILTER WATER SEPARATOR CONVERSION TO FILTER MONITOR



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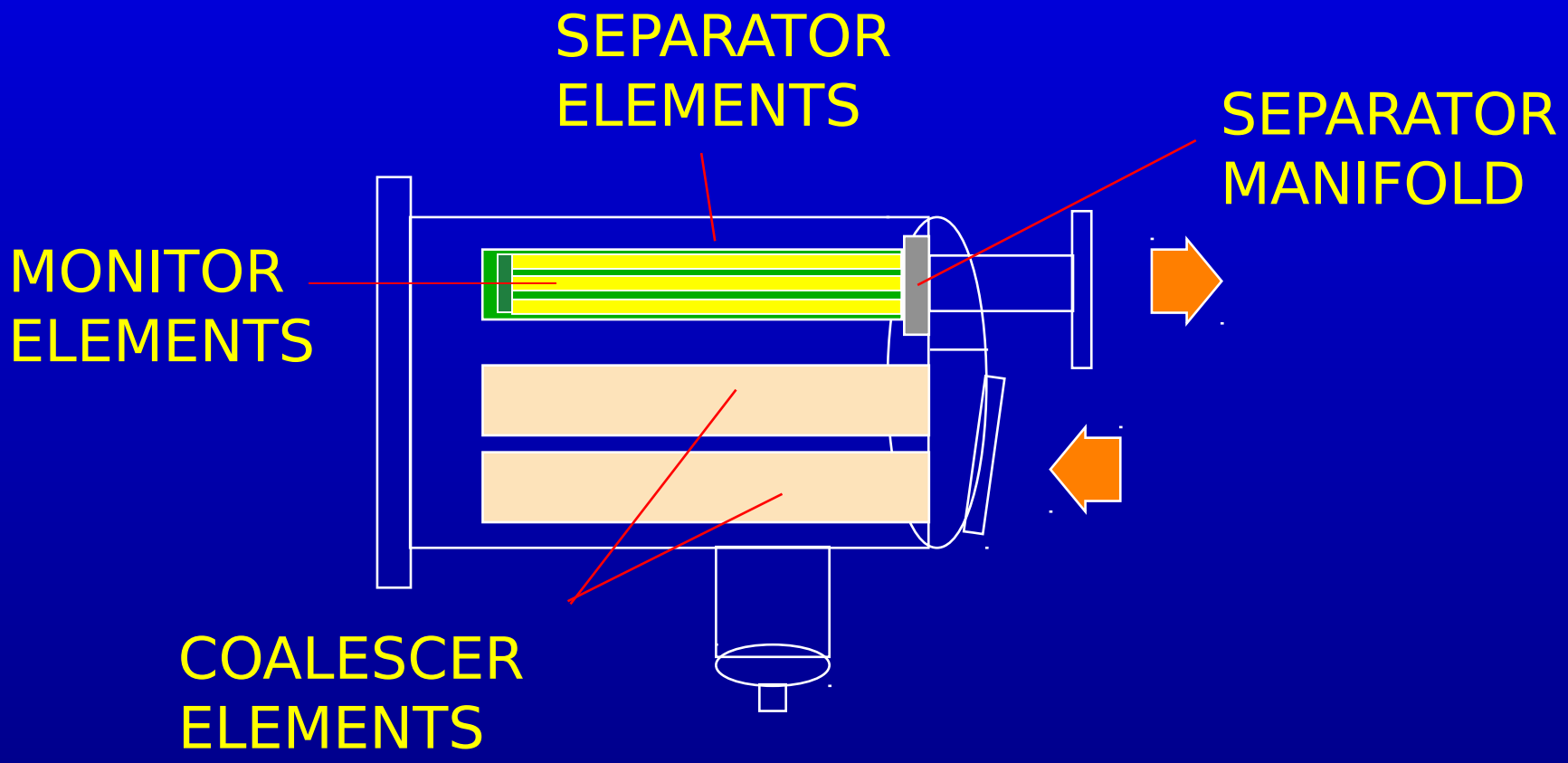
3-STAGE FILTER WATER SEPARATOR/MONITOR



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3-STAGE FILTER WATER SEPARATOR

SEPARATOR ELEMENT

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3-STAGE FILTER WATER SEPARATOR

SEPARATOR ELEMENT SHOWING CDF ELEMENTS

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MICROFILTERS

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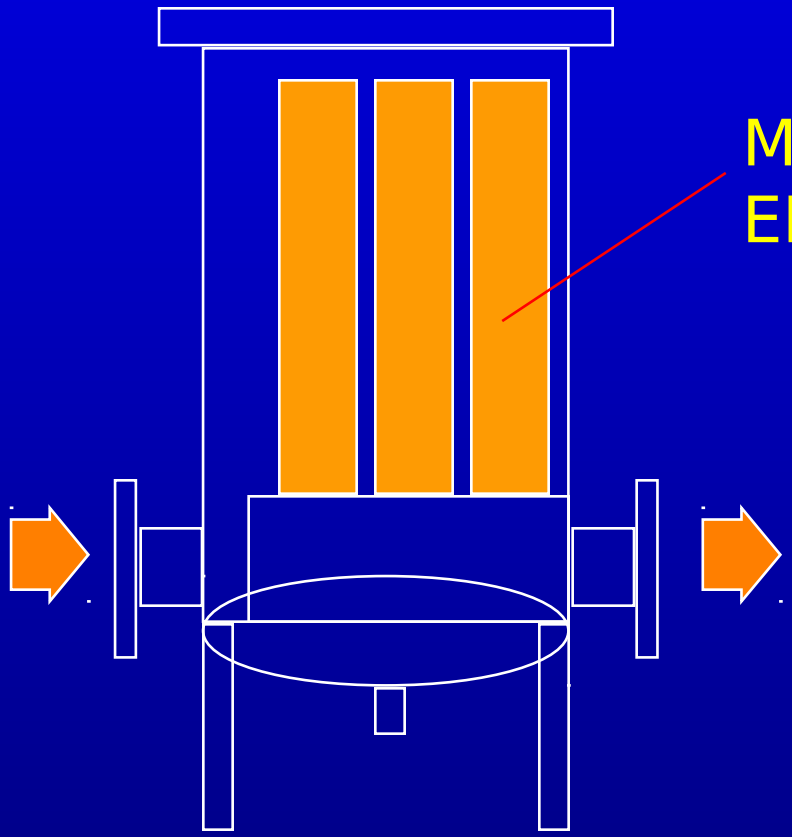
MICROFILTER



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MICROFILTER ELEMENT

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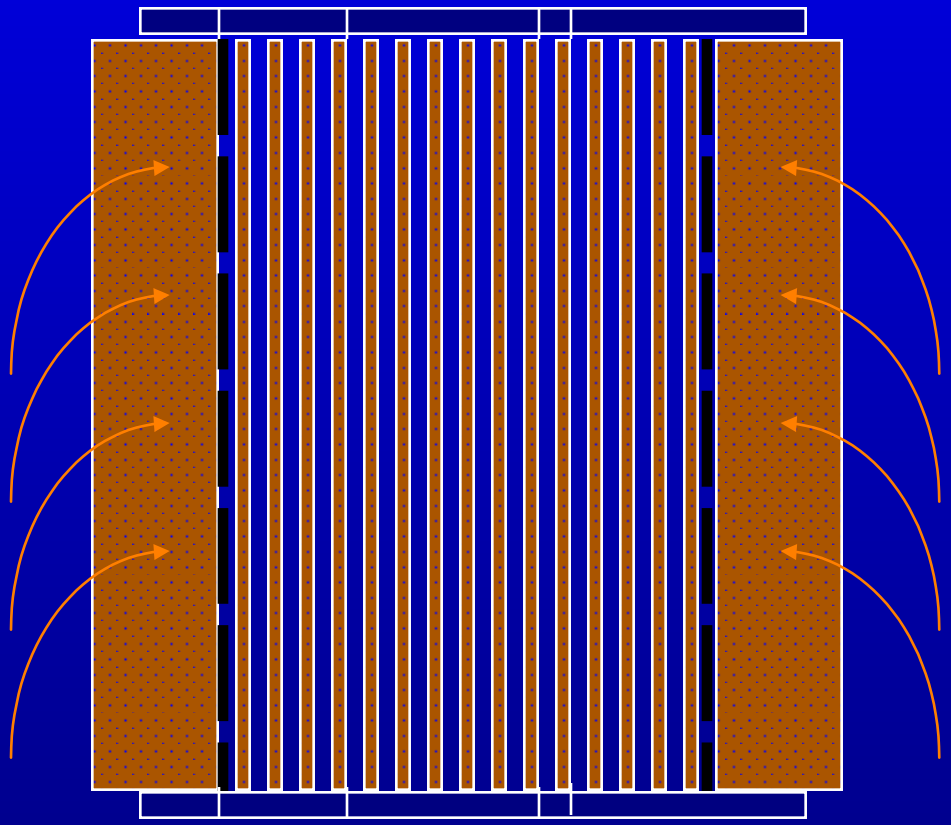
MICROFILTER ELEMENT



FLOW DIRECTION OUT TO IN

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MICROFILTER

- VELCON MICROFILTER ELEMENTS USED FOR FILTRATION ONLY.

- FIT UPSTREAM OF FILTER WATER SEPARATORS TO EXTEND COALESCER ELEMENT LIFE.

- USE 1/2 MICRON TO PROVIDE FULL BENEFIT TO DOWNSTREAM ELEMENTS.

- LARGE DIRT HOLDING CAPACITY.

- LEAST EXPENSIVE ELEMENT TYPE.

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MICROFILTER

- OVERSIZE MICROFILTER VESSELS IF KNOW DIRTY APPLICATION.

- ELEMENT LIFE EXPONENTIAL THEREFORE SIZE FOR 2X FLOW RATE GAIN 3X LONGER ELEMENT LIFE.

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VELCON MICROFILTERS

VELCON 1/2µ SERIES MICROFILTER

- SAME FILTRATION MEDIA AS ‘85’ SERIES COALESCERS
  - 0.5 MICRON FILTRATION
  - 5 MICRON PRE-FILTRATION LAYER
- USE TO EXTEND COALESCER ELEMENT CHANGEOUTS.
- LAST LONGER THAN 1µ ELEMENTS
- AVAILABLE IN VARIOUS LENGTHS (DO NOT STACK)

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CLAY TREATMENT VESSEL

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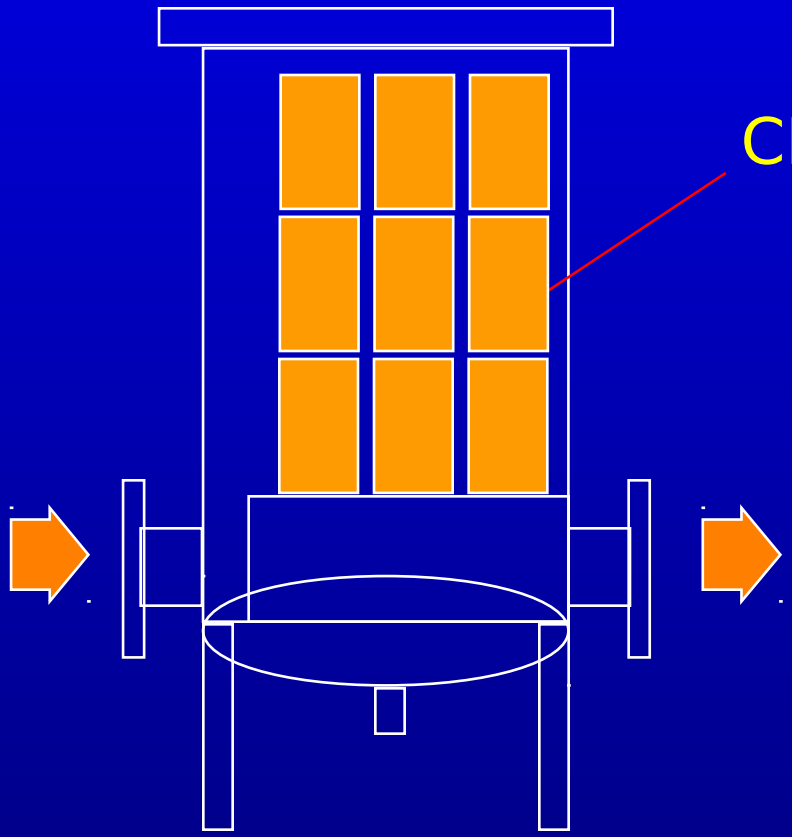
CLAY TREATMENT VESSEL



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CLAY ELEMENT

- SURFACTANTS PREVENT COALESCER ELEMENT FROM DOING THEIR JOB

- CLAY ADSORBS SURFACTANTS ONTO SURFACE OF TINY CLAY GRANULES.

- FIT UPSTREAM OF FILTER WATER SEPARATORS TO ALLOW COALESCER ELEMENTS TO WORK.

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